

Original article

An educational intervention program on knowledge about oral hygiene measures

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Abstract:

Background: Health education is a process of transmission of knowledge and skills necessary for improvement in quality of life. **Objectives:** The purpose of this quasi-experimental study was to evaluate the oral hygiene related knowledge among the population in a selected community before and after health education. **Materials and Methods:** A total of 106 respondents were taken purposively at South Pirerbag of Dhaka city. Baseline data were collected by pre-tested structured questionnaire. An educational intervention program was conducted by dividing the respondents into seven groups, 15 in each group; method was group discussion and lecture; poster, model of teeth and brush were the aids. Post intervention data were collected by the same questionnaire. **Results:** Among the respondents, 61.32% were male and 38.68% were female, mean age was 46.25 years, 35.85% had primary level education, monthly family income was Tk 5000-10000 in 66.98%. Before intervention 64.15% told that teeth should be cleaned twice daily, 62.26% told teeth should be cleaned by brush and paste and 2.83% told teeth should be cleaned after breakfast and night; whereas after intervention the result was 91.51%, 85.85% and 67.93% respectively. Before intervention 66.98% stated that tobacco is hazardous to health but 32.4% have no idea about the type of diseases that occur due to tobacco; whereas after intervention 89.62% told that tobacco is hazardous to health and most of them had idea about harmful effect of tobacco. **Conclusion:** Educational intervention program is effective to improve the knowledge of the respondents about oral hygiene.

Keywords: knowledge; oral hygiene; health education

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Introduction:

Oral health knowledge is considered to be an essential prerequisite for health-related practices¹, there is an association between increased knowledge and better oral health^{2,3}. Those who have assimilated the knowledge and feel a sense of personal control over their oral health are more likely to adopt self-care practices⁴.

Now-a-days oral disease can be considered as a public health problem due to its high prevalence and significant social impact. Chronic oral disease typically leads to tooth loss, and in some cases have physical, emotional and economical impacts⁵. Physical appearance and diet are often worsened and the pat-

tern of daily life and social relations are also often negatively affected. These impacts lead in turn to reduce welfare and quality of life. To minimize these negative impacts of chronic oral diseases, there is a clear need to reduce harmful oral health habits. Such a reduction can be achieved through appropriate health education program^{5,6}.

Bangladesh is a developing country with a vast population. Many people of this country live below poverty line. They possess a harmful life style for health, especially oral health. Dental problem is still a significant public health problem in both developed and developing countries. Good oral health is a key for ensuring overall well being. Our teeth play

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an important role in our daily lives. It increases the beauty of the face, helps in digestion of food by chewing and grinding and enables to articulate and pronounce words correctly while talking.

In order to establish oral hygiene as an important prophylactic measure influencing successful protection of oral health of the whole population, it is necessary to inform as many people as possible about oral hygiene effectiveness and its necessity in preventing oral and dental diseases; to develop the habits of regular oral hygiene maintenance in the people. Regarding high prevalence of dental problem in population, the issue of prophylaxis is of great significance. In that respect, health education should point out to the significance of proper and regular oral hygiene, all aimed at preventing dental diseases.

The purpose of the study is to assess the knowledge about oral hygiene among the population in a selected community before and after health education. The information from this study will help policy makers to identify the information gaps and formulate guidelines and act as a baseline for further study.

Methodology:

Study Design:

This was a quasi-experimental type of study. In this study the outcome of educational intervention is obtained by comparing pre and post intervention on knowledge of the same group of people. The study was carried out at South Pirerbag, Dhaka. The study population was selected randomly irrespective of age, sex and religion. Participation was voluntary. The sample size was 106. The sample was collected by non probability purposive sampling.

Data Collection Procedure:

A structured questionnaire was developed based on the objectives and variables of the study. It was finalized after modification and correction based on the findings of questionnaire pretesting. Before collection of data permission was taken from the respondents. The purpose of the study was explained to the respondents prior to administering the interview. With the consent of the respondents data was collected by face to face interview by using Bengali version questionnaire. The study population was interviewed twice with the same sets of structured questionnaire. At first baseline data were collected. After collection of baseline data, health education program was conducted by preparing a lesson plan according to the objectives. Second phase of data was collected after intervention. The privacy of the respondents was maintained strictly. This study was not involved any

physical, mental and social risk of the respondents.

Data Processing And Analysis:

After collection of information through questionnaire, the data were coded, entered and analyzed in a computer. The findings of the study were presented by frequency, percentage and table and data analysis was done using statistical package for social sciences or SPSS version 14 (Chicago, IL, USA).

Educational Intervention Program

According to the baseline information an educational curriculum was prepared with necessary educational materials for health education intervention program. A total 106 respondents were selected purposively. They were divided into seven groups, each groups consist of 15 respondents. The allocated time was thirty minutes for each group. The respondents were informed previously according to scheduled date and time. Health education intervention session was conducted using various methods (lecture, group discussion) and media (poster, model of teeth, tooth brush) for dissemination of knowledge. The program was evaluated on the basis of change in knowledge about oral hygiene before and after intervention by applying structured questionnaire. Post intervention data collection was started after 15 days of educational intervention program.

Results:

In this study 106 respondents were participated with mean age 46.25 ± 11.27 years. Majority of them had only school level education and others were illiterate. Mean monthly family income was 7520.94 ± 320.40 Taka. Among the respondents 61.32% were male and 38.68% were female.

Among 106 respondents, before intervention 64.15% respondents told that teeth should be cleaned twice daily and 25.47% respondents told once daily; whereas after intervention it was changed into 91.51% and 4.72% respectively. (Table-1).

Table - 1: Distribution of the respondents by knowledge on frequency of tooth cleaning before and after intervention (n=106)

Frequency of tooth cleaning	Before intervention		After intervention	
	frequency	percent	frequency	percent
Once daily	27	25.47	5	4.72
Twice daily	68	64.15	97	91.51
Thrice daily	11	10.38	4	3.77
Total	106	100.00	106	100.00

Before intervention 62.26% respondents told that teeth should be cleaned by tooth brush and tooth paste, 20.76% respondents told tooth powder, rest of them told coal, Miswak and ash were ideal tooth cleaning materials; whereas after intervention 85.85% respondents told that teeth should be cleaned by tooth brush and tooth paste, 10.38% respondents told tooth powder (Table-2).

Table -2: Distribution of the respondents by knowledge on materials used for tooth cleaning before and after intervention (n=106)

Materials used for tooth cleaning	Before intervention		After intervention	
	Frequency	Percent	Frequency	Percent
Tooth brush & tooth paste	66	62.26	91	85.85
Tooth powder	22	20.76	11	10.38
coal	6	5.66	1	0.94
Miswak	7	6.60	3	2.83
Ash	5	4.72	0	0
Total	106	100.00	106	100.00

Before intervention 72.64% respondents told that people should visit to dentist when dental problem occur and 10.38% respondents told taking drug from pharmacy; whereas after intervention percentage towards dental visit was increased into 95.28%. (Table-3)

Table – 3: Distribution of the respondents by knowledge on duration of tooth cleaning before and after intervention (n=106)

Duration of tooth cleaning	Before intervention		After intervention	
	Frequency	Percent	Frequency	Percent
Less than 1 minute	19	17.92	9	8.50
1-2 minutes	26	24.53	78	73.58
3-5 minutes	38	35.85	19	17.92
Don't know	23	21.70	0	0
Total	106	100.00	106	100.00

Table -4 shows the distribution of the respondents by knowledge on time of tooth cleaning before and after intervention. Among 106 respondents 26 (24.53%) told teeth should be cleaned before breakfast, 2 (1.89%) told after breakfast, 9(8.49%) told every after meal, 66 (62.26%) told before breakfast and before going to bed, 3 (2.83%) told after breakfast and before going to bed ; where after intervention 10 (9.43%) told teeth should be cleaned before breakfast, 1 (0.94%) told after breakfast, 6 (5.66%) told every after meal, 17 (16.04%) told before breakfast and before going to bed, 72 (67.93%) told after breakfast and before going to bed.

Table -4: Distribution of the respondents by knowledge on time of tooth cleaning before and after intervention (n=106)

Time of tooth cleaning	Before intervention		After intervention	
	Frequency	Percent	Frequency	Percent
Before breakfast	26	24.53	10	9.43
After breakfast	2	1.89	1	0.94
Every after meal	9	8.49	6	5.66
Before breakfast and night	66	62.26	17	16.04
After breakfast and before going to bed	3	2.83	72	67.93
Total	106	100.00	106	100.00

Table – 5 shows that before intervention 42 (39.62%) respondents told that after every meal teeth should be cleaned by gargling with water, 11 (10.38%) respondents told tooth brushing, 39 (36.79%) respondents told nothing and 14 (13.21%)

Table -5: Distribution of the respondents by knowledge on cleaning teeth after every meal before and after intervention (n=106)

Cleaning teeth after every meal	Before intervention		After intervention	
	Frequency	Percent	Frequency	Percent
Gargling with water	42	39.62	98	92.45
Tooth brushing	11	10.38	5	4.72
Nothing	39	36.79	3	2.83
Don't know	14	13.21	0	0
Total	106	100.00	106	100.00

respondents did not know the answer where after intervention 98 (92.45%) respondents told that after every meal teeth should be cleaned by gargling with water, 5 (4.72%) respondents told tooth brushing.

Table – 6 shows that before intervention 77 (72.64%) respondents told that measures taken during dental problem should be go to dentist, 18 (16.98%) respondents told gargling with warm salt water and 11 (10.38%) respondents told taking drug from pharmacy; where after intervention 101 (95.28%) respondents told that go to dentist in a dental problem is correct decision, 5 (4.72%) told gargling with warm salt water and no respondent was positive for taking drug from pharmacy in a dental problem.

Tables - 6: Distribution of the respondents according to knowledge on measures taken during dental problem before and after intervention (n=106)

Measures taken during dental problem	Before intervention		After intervention	
	Frequency	Percent	Frequency	Percent
Taking drug from pharmacy	11	10.38	0	0
Go to dentist	77	72.64	101	95.28
Gargling with warm salt water	18	16.98	5	4.72

Table – 7 shows that before intervention 71 (66.98%) respondents told that tobacco is hazardous to health, 35 (33.02%) respondents told tobacco is not hazardous to health; where after intervention 95 (89.62%) respondents told that tobacco is hazardous to health and 11 (10.38%) respondents told that tobacco is non hazardous to health.

Table -7: Distribution of respondents by opinion on effect of tobacco on oral health before and after intervention (n=106)

Tobacco is hazardous to oral health	Before intervention		After intervention	
	Frequency	Percent	Frequency	Percent
Yes	71	66.98	95	89.62
No	35	33.02	11	10.38
Total	106	100.00	106	100.00

Table – 8 shows that before intervention 23 (32.40%) respondents did not know what kind of disease occur due to smokeless tobacco consumption. 12 (16.90%) respondents told that smokeless tobacco cause both bad breath and stain in tooth, 7 (9.86%) told cancer, 9 (12.68%) told bad breath

only; where after intervention 63 (66.32%) respondents told that smokeless tobacco cause ulcer, stain, bad breath, loss of taste and cancer all, 9 (9.47%) told both bad breath and stain of tooth and 6 (6.32%) told cancer only.

Table – 8: Distribution of the respondents by knowledge on type of disease occur in the mouth due to smokeless tobacco use before and after intervention

Type of disease	Before intervention		After intervention	
	Frequency	Percent	Frequency	Percent
Cancer	7	9.86	6	6.32
Bad breath	9	12.68	3	3.16
Stain in tooth	6	8.45	5	5.26
Loss of taste, ulcer in the mouth	5	7.04	4	4.21
Bad breath, cancer	5	7.04	5	5.26
Bad breath, stain in tooth	12	16.90	9	9.47
Ulcer, stain, bad breath, cancer, loss of taste	4	5.63	63	66.32
Don't know	23	32.40	0	0
Total	71	100.00	95	100.00

Discussion:

This educational intervention study was carried out among the general population in a selected community with a view to assess the effect of health education about oral hygiene measures. A total 106 respondents were interviewed with structured questionnaire and an educational intervention program was conducted which was evaluated after intervention.

Among 106 respondents maximum 35 (33.02%) belongs to 41- 50 years age groups, 28(26.42%) belonged to 31-40 years, 22 (20.75%) were 51-60 years, 14(13.21%) were 61-70 years and 7 (6.60%) belonged to 21-30 years. The mean age was 46.25± 11.27 years. About 38 (35.85%) of respondents were primary level education, 28 (26.41%) were secondary level, 27 (25.47%) were illiterate, 11 (10.38%) were S.S.C. passed and 2 (1.89%) were H.S.C. passed. Among the respondents 37 (34.90%) were Day laborer, 19 (17.92%) were Service holder, 17 (16.04%) were Housewives, 11 (10.38%) were Rickshaw puller, 9 (8.49%) were Driver, 8(7.55%) were Businessman and 5 (4.72%) were self employed.

Majority 71 (66.98%) of the respondents monthly family income within taka 5000 – 10000, 25

(23.59%) respondents family income below 5000, 7 (6.60%) respondents family income between 11000-15000 and 3 (2.83%) respondents family income more than taka 15000.

Oral health includes preservation of dentition and maintenance of good oral hygiene. Dental diseases—such as dental caries (tooth decay) and periodontal disease (gum diseases)—cause pain, discomfort on chewing, hypersensitivity, and bad breath. Tooth loss may restrict choices of food, and be associated with loss of pleasure in eating,⁴ decline in self-confidence⁷, poor articulation and malnutrition. Chewing difficulties are associated with a personal perception of poor health and depression⁸. Oral health affects the quality of life. Thus, good oral hygiene benefits both oral and general health.

This educational intervention study showed that the knowledge of the respondents regarding oral hygiene measures was improved after health educational intervention. This was similar to a study done by Hebbal et al. in Belgaum, India⁹. Similar result was found in the study done by Shenoy in India, Thomas in Kerala and Tewari in Ambala¹⁰⁻¹².

Though after intervention the percentage of the respondents on oral hygiene knowledge slightly improved, but the increase percentage is not satisfactory. The concerned authority can play a vital role to improve the knowledge on everyday science and per-

sonal hygiene including oral hygiene among the mass population in Bangladesh. Hence we may get a generation free of oral diseases and a good oral health.

Conclusion:

The change to healthy attitude and knowledge can be occurred by giving adequate information and motivation to the respondents. Therefore dental health education is needed focusing on the special needs of the population to improve their quality of life.

Recommendation:

On the basis of the findings of the present study following recommendations were drawn:

Community oriented intervention program for community people should be arranged.

Provide effective and appropriate messages on oral health through mass media such as radio, television, newspaper, folk song, billboard etc.

Educational Intervention program should be arranged at school, work place and hospital.

Include a chapter on oral hygiene and practices in the health education curriculum at school so that the school going children improve their knowledge and practice and dissemination of information among their family members.

Regular training among the community health workers to educate the community people about oral health.

Train up the community leaders about proper oral hygiene so that they can build awareness to the community people through disseminating information.

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